

## FoliarBlend Main Brochure

### Front Cover

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#### BIGGER YIELDS FROM THE GROUND UP

Healthier Soils | Stronger Plants | Higher Yields

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#### YOU'RE ALREADY STANDING ON THE KEY TO BIGGER YIELDS AND BETTER PROFITS

In order for growers to maximize their yield and profit potential, they must look beyond the standard options to their soil and plant's biological systems.

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Today's farming environment has become a survival of the fittest with growers pushing the limits to get the most from every acre of production. In the last decade, significant technological advances have been made that push limits further than ever before. When you consider the numerous advancements in farm equipment, plant genetics and chemicals ranging from herbicides to fungicides to insecticides, the choices and technologies available to today's farmer are staggering.

In order for growers to maximize their yield and profit potential, they must look beyond the standard options like the newest trend in equipment, the latest seed genetics or the hottest chemical that promises to solve their problems. Even bumping conventional (N-P-K) fertilizer rates, expecting yields to jump accordingly, is simply not the answer to better profits and higher yields. To truly maximize yield and increase profit margin, one must look beyond the obvious physical and chemical fixes, and consider the critical role the soil's biological life plays in crop production. In fact, many yield problems are caused by the neglect of this essential component in crop production which, unfortunately, is all too often overlooked by most growers.

What if you could simply tank mix a product to your normal spray program that has a targeted effect on the soil and plants' biological system — one that improves soil structure, promotes healthy soil for better growing conditions, increases fertilizer efficiency, supports vibrant and robust plant growth, and boosts yields? FoliarBlend® is designed to do just that and more. FoliarBlend does what chemicals, conventional fertilizer and physical tillage alone can't, and it fills a growing void that is missing in today's agriculture. Don't let the name mislead you. FoliarBlend is just as effective in the soil as it is on the plant. Smart growers looking for an edge are quickly discovering just how rewarding FoliarBlend can be, both in the field and in the bank.

#### The Biological Edge

All too often, the biological component of plant growth is an overlooked key to increasing yield and profits. When equally addressed along with the physical and chemical aspects of crop production, the results can be significant in terms of yield and profit.

The 3 Soil Properties: chemical, physical, and biological.

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### **Facing the Challenge**

Extreme temperatures, adverse weather conditions, disease, insect pressure, inadequate and imbalanced plant nutrition -- all of these conditions can rob your crops of the yield and profits you deserve. When applied as part of a good management program, FoliarBlend works to keep your plants and the immediate soil environment "spiked up" with the nutritional supplements required to maximize yield and support plant health.

FoliarBlend simply helps your crop reach its genetic yield potential by boosting plant growth, increasing nutrient uptake, supporting plant health and quality, and building a healthy growing environment. Research has proven that crops treated with FoliarBlend are healthier, have improved nutrient uptake and availability, plant growth and higher yields.

FoliarBlend represents a new generation of technology, containing complex carbohydrates, essential plant macro and micronutrients, a proprietary blend of beneficial enzymes, amino acids and a host of nutritional supplements not found in ordinary N-P-K fertilizers. FoliarBlend has a profound effect on both the plant and the soil environment.

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### **Performance in the Field**

Field tests show that FoliarBlend, when added to full or reduced rates of conventional fertilizer, has consistently outperformed full rates of N-P-K alone. Research and grower testimonials also indicate that FoliarBlend is superior to other competitive technologies, especially when comparing its ease of application, impact on yield, effect on growing conditions in the soil, the cost savings received from reduced conventional fertilizer and chemical inputs, and the return on investment from using the product.

### **Cost Savings You Can See**

FoliarBlend is cost effective for virtually any grower regardless of size. Growers routinely report a profit from FoliarBlend from the savings they realize in conventional fertilizer and chemical inputs alone. When you add FoliarBlend's impact on yield, the financial return can be significant. In fact, we feel a grower should receive a "minimum" of \$3 returned for every \$1 spent on FoliarBlend or else we are

simply not doing our job. Most growers discover their return to be far greater, especially in high value specialty crops like fruits and vegetables.

**Testimonial:**

"If you do a test plot with FoliarBlend, it will prove itself and put more money in your pocket. It pays for itself in a hurry if you use it right."

- Les Thomas, Missouri rice and soybean producer

**"UNLOCK YOUR CROPS' POTENTIAL AND BANK ON BIGGER YIELDS."**

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None

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Healthier Soils | Stronger Plants | Higher Yields | Better Profits

**Benefits at a Glance**

- Better yields, higher test weight and greater crop quality as a result of improved plant nutrition.
- Triggers an explosion of beneficial soil bacteria which speeds up the breakdown of crop residue, builds humus and improves soil structure, drainage and tilth.
- Increases healthy indigenous microbial activity in the soil or growing medium with increases of 3400% demonstrated within three days of application.
- Improves nutrient release and solubility by up to 60% compared to non-treated soils by speeding up the breakdown and improving the availability of both naturally occurring and applied nutrients. Depending on soil test levels, growers may be able to reduce P & K inputs up to 50%.
- Supports overall plant development.
- Supports plant health, minimizing the effects of weather-related stress.
- Offsets the negative effect of glyphosate by minimizing "yellow-flash".
- Lowers sodium levels in the soil.
- Derived from many different types of beneficial bacteria—including aerobic and anaerobic microorganisms—the product is effective in both well drained and tight soils.
- A source of essential micronutrients, proteins, enzymes, amino acids and complex carbohydrates not available in ordinary N-P-K fertilizers.
- Can be easily applied in conjunction with other liquid applications, pesticides, herbicides, fungicides and conventional fertilizers through ground, air or fertigation systems.
- When stored properly, FoliarBlend has a shelf life of four years without losing effectiveness.

### **FoliarBlend Works The Way Nature Intended**

FoliarBlend delivers a wide range of benefits for growers who want to create a healthier, more efficient growing environment and maximize their return on investment. University research, as well as independent field trials by growers around the world, show that regular use of FoliarBlend contributes to better fertilizer utilization, improved plant growth and vigor, better soil conditions, higher yields and better crop quality.

### **SOIL APPLICATION**

#### **IT'S ABOUT GETTING WHAT YOU'VE ALREADY PAID FOR**

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If your soil is like most, you probably have an abundance of insoluble nutrients that are not available to your crops. Many of these nutrients are fertilizers you've invested in but are receiving no benefit from. FoliarBlend can access these nutrients and put them to work for your crop this growing season.

When soil applied or placed in furrow at planting, the active ingredients in FoliarBlend trigger natural biological processes that create an explosion of beneficial microbial growth of 3,000% or more within the first 72 hours of application. This increased enzymatic and microbial activity works to release insoluble nutrients in the soil and convert them to a soluble form plants can utilize. By improving the uptake and availability of applied fertilizers and those nutrients presently in the soil, FoliarBlend helps "Get What You're Paying For" out of the soil and into the plant. This tremendous increase in the availability of nutrients has a direct effect on the growth and development of your crops, resulting in healthier, higher quality plants with better yields. By improving nutrient uptake, the yield and quality of forage and feed crops are also improved considerably. Increases in tonnage of 10 to 20% and relative feed values of 20 to 50 points are quite common with FoliarBlend on these type of crops.

University testing has proven that when applied broadcast to the soil or placed in-furrow at planting, the active ingredients in FoliarBlend create significantly higher concentrations of available nitrogen, calcium, copper, potassium, magnesium, manganese, phosphorus, boron, molybdenum, iron and zinc compared to untreated soils. FoliarBlend makes more of these nutrients available for deposit in the vegetative tissue as well, having a positive result on yield, test weight and quality.

#### **% Change of Nutrient Availability using FoliarBlend.**

[see chart on page 9]

In a detailed University study, the ingredients in FoliarBlend significantly increased the uptake and availability of 12 macro and micronutrients while lowering the levels of sodium in the soil and plant tissue. Conclusion: FoliarBlend not only improves yield and plant growth, but has the

potential to reduce environmental pollution by more efficient utilization of fertilizer nutrients and thus the potential reduction of applied conventional fertilizers.

*Research conducted by Lincoln University, Jefferson City, MO/David Sasseville Ph.D.*

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### **Increased Microbial Activity, Improved Nutrient Cycling and Better Residue Management**

In nature, when plants and animals expire, over time they decay with exposure to water, sun, air and the family of naturally occurring microorganisms called decomposers. However, in most commercially farmed soils, biological activity in the soil has become very low. This leaves partially decomposed organic matter and crop residue to accumulate, minimizing the soil's effectiveness to transfer nutrients and creating less than ideal growing conditions generally. The result is a greater dependence on applied fertilizers and chemical fungicides to sustain favorable growing conditions.

FoliarBlend re-invigorates this natural biological process by increasing the populations of indigenous decomposing microorganisms in the soil. In fact, research by EMSL Labs, New York, NY, verified FoliarBlend was able to stimulate microbial activity by 3400% within 24 hours of application. This improves the natural bio-degradation process which allows the earth to recycle itself, resulting in more organic matter and the production of humus, a valuable source of plant nutrition. By stimulating microbial activity, crops benefit from an increase in available nutrients as well as the production of plant beneficial proteins and enzymes, and physical improvements to the soil strata these microbes generate. The plant/soil system becomes healthier and more efficient in its uptake of nutrients, requiring less water and less conventional N-P-K fertilizer to produce higher crop yields.

### **Quality over Quantity**

While high microbial populations in a growing environment are important, a better indication of a soil's health and production capabilities are the types of microbes involved. This brings to light another advantage of FoliarBlend, the ability to elevate the number of beneficial species.

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### **SOIL BENEFITS AT A GLANCE**

Soils with low levels of microbial activity will not be as productive as those with elevated levels of beneficial micro-organisms, regardless of the amount of conventional fertilizer applied.

- Improves soil structure; tilth, porosity and friability.
- Improves plant growth and development.
- Improves the availability of resident soil minerals and fertilizer materials.
- Aids in the detoxification of pollutants (chemical residues, salts).
- Promotes overall plant and soil health.

- Minimizes the impact of pH extremes.
- Improves water management within soil.
- Improves crop quality and yields.

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### **FOLIAR FEEDING: AN IMPORTANT LINK TO HEALTHIER PLANTS & HIGHER YIELDS**

What can you do to maintain top Yield Potential? The best defense against yield loss is a healthy plant. Maintaining a high nutrient content helps to ensure plant health. Compatible with most conventional liquid fertilizers and chemicals, FoliarBlend is an easy way to improve plant growth, yield and quality. Applications timed before or during key growth stages in crop development or nutrient demand can help plants overcome “hidden hunger,” where nutrient availability falls short of crop demand for top yields.

Plants seldom have all the nutrition or energy they need to maintain all the blooms or kernels they have initiated. Too often, many of the blooms fall off or kernels slough off in the early stages of development and yields suffer. FoliarBlend can help prevent against bloom and kernal loss resulting from inadequate nutrition and support your crops through critical stages of growth for increased yields.

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FoliarBlend can be compared to a multi-vitamin, ensuring the plant is as prepared as possible to respond when stress strikes.

### **It's Like a Multi-Vitamin For Plants**

It bears repeating, the best defense against yield loss is a healthy plant.

Regular applications of FoliarBlend support overall plant health. This also improves the plant's ability to better withstand environmental stress.

### **FOLIAR BENEFITS AT A GLANCE**

- Boosts yields and supports plant health.
- Tank mixes with most all conventional liquid fertilizers and chemicals for easy application.
- Supports optimal photosynthetic activity.
- Improves plant growth.
- Supplies essential plant nutrition for healthier plants.
- Improves overall yields and crop quality.



#### **ENVIRONMENTAL EFFECT: FOLIARBLEND'S IMPACT ON WATER**

FoliarBlend is designed to safely promote plant growth, improve soil conditions and enhance water conservation.

Real world experience has shown that the addition of FoliarBlend as part of a comprehensive fertilization program may help reduce water consumption in some cases by as much as 30%! While the exact level of water reduction will be affected by many variables, you can count on FoliarBlend's ability to improve water efficiency in the following ways:

- Supports efficient water uptake and absorption
- Supports optimal water regulation and retention within the plant
- Improved porosity, friability and drainage in the soil

Real world experience has shown that the addition of FoliarBlend may help reduce water consumption by as much as 30%!

#### **Supports efficient water uptake and absorption.**

FoliarBlend increases the availability of phosphorus and other essential plant nutrients in the soil. Phosphorus is important in root growth and development. When root growth is optimized, there is a larger root surface with which to take up water and other nutrients, making the plant more efficient. Providing plants with enough phosphorus to meet their demand allows plants to grow to their fullest capacity, including the most extensive root system they are capable of -- a more robust root system occupies a larger volume of soil, which in turn, increases the volume of water available to the plants.

#### **Supports optimal water regulation and retention within the plant.**

FoliarBlend influences other essential plant nutrients making them more available to plants. For example, FoliarBlend increases potassium levels in the plant. Potassium

regulates water uptake by controlling transpiration through the leaves. Potassium also helps to move nutrients into and within the plant. Other plant nutrients, such as calcium, influence the thickness of cell walls and also the thickness of the cutin layer on leaves, stems and fruits. The cutin layer is the waxy surface on plants that reduces water loss.

#### **IMPROVED POROSITY, FRIABILITY AND DRAINAGE IN THE SOIL.**

FoliarBlend increases the porosity of many soils and makes the soil looser. Roots have difficulty penetrating heavy clay soils. FoliarBlend increases the friability (looseness) of soils enabling roots to be longer, deeper, and more branched. This increased root growth increases the surface area of the roots,

the volume of soil and amount of water available to the plant. Another aspect of increasing friability is that with increased air space, the water holding capacity of the soil also increases. Thus, there is more water available to the roots in a given volume of soil. As the soil becomes more porous, water more easily drains from the soil. While this would appear to have a negative effect on water conservation for lawns and gardens, it does not. Plant roots require oxygen to grow and thrive. They require oxygen to take up plant nutrients and water. If the soil around the roots is too wet (a condition called "wet feet"), the plants do not have enough energy (from respiration) to take up water and essential nutrients. That is why over-watering can cause a plant to wilt. Poorly drained clay soils tend to become wet and stay wet, making it difficult for plants to take up water. What is needed is a balance between water and air in soil pores. FoliarBlend, by increasing friability, porosity, and good drainage, helps increase the water efficiency of plants and contributes to water conservation.

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#### **IF YOU USE GLYPHOSATE, YOU NEED FOLIARBLEND**

Research has shown that Glyphosate, the active ingredient in Roundup®, can suppress the formation of nitrogen nodules on soybean roots and temporarily weaken the plant's immune response and defense mechanisms. This negative effect is further magnified when conditions place the plant under stress from environmental conditions or attack from pests or disease.

Hundreds of university and independent studies have shown there is a yield drag of 5 to 10% with Roundup Ready® (RR) varieties compared to comparable conventional varieties grown under similar and favorable conditions. Ongoing research on yield drag in RR soybeans points to the following possible explanations detailed on the next pages.

#### **FOLIARBLEND OFFSETS THE YIELD DRAGGING EFFECTS OF GLYPHOSATE.**

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First, Glyphosate is a strong chelating agent which binds divalent micronutrients in the plant, especially manganese and iron. Flashing or yellowing of young leaves of RR crops is often the result of glyphosate binding these divalent micronutrients.

[IMAGE p 17]

Caption: Dark Areas Not Treated with Glyphosate

While FoliarBlend contains a variety of micronutrients, it may not be sufficient to overcome a severe nutrient deficiency in the soil or plant. Only soil testing and tissue analysis can determine the adequacy of available nutrients for optimum plant nutrition.



Second, Glyphosate, the active ingredient in Roundup®, can suppress the formation of nitrogen nodules on soybean roots. This reduction decreases the amount of nitrogen available to the soybean plant and can reduce yields. This effect from applied glyphosate is greater when the crop is under stress from conditions such as drought. The effect of glyphosate is likely on the suppression of rhizobium, the symbiotic bacteria required for nodulation, but it may also be from a broader effect on the normal physiology of the soybean plant.

Third, Glyphosate application temporarily weakens the RR soybean plant's immune response and defense mechanisms, especially when conditions place the plant under stress from environmental conditions or attack from pests or disease. With the plant's ability to defend itself at a weakened level, the plant is more susceptible to disease and insect pressure resulting in yield loss.

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#### **SO, WHAT CAN FOLIARBLEND DO TO HELP?**

FoliarBlend contains numerous chelated micronutrients, including manganese and iron, which can reduce the nutrient tie up effect caused by glyphosate on RR crops. Since the micronutrients in FoliarBlend are chelated, it can be tank mixed with glyphosate to minimize "yellow flash" symptoms without reducing the efficacy of the herbicide. For added insurance against "yellow flash" symptoms and resulting yield drag, it is advisable to add AgriGuardian™ Micro Mix to all glyphosate applications. Field trials have shown the combination of FoliarBlend and Micro-Mix can further enhance yield, support plant health and improve crop quality.

Glyphosate kills by shutting down the natural defense system within the targeted weed species. This is done by chelating- and making unusable — key micronutrients required by certain biochemical pathways within the plant.

#### **An Ounce of Prevention**

The ingredients in FoliarBlend counteract the impact of glyphosate by providing the essential nutrients affected by glyphosate. These nutrients support plant health, making plants better prepared to withstand weather related stress and other factors that can rob your crop of valuable yield.

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#### **THE RESULTS SPEAK FOR THEMSELVES!**

##### **SOYBEANS**

Two-year average from replicated USDA and University of Missouri research yielded an additional 9.8 bushel/acre in Roundup Ready and conventional soybeans.

Foliarblend treated plots showed increased levels of Mn reducing bacteria by an average of 76%.  
*Mn reducing bacteria transform manganese to plant available forms.*

- *Two-year average, USDA & University of Missouri replicated study*

#### GRAPH

Roundup Ready™ Research

USDA & University of Missouri

Replicated Research, 16 oz./acre of FoliarBlend applied at V3 and R4 growth stage. (p< 0.05)

Control Plot: 46.3 bushels/acre

FoliarBlend: 60.4 bushels/acre

Results using FoliarBlend on Soybeans: 14.1 bushels per acre increase!

In a five-year independent study, the FoliarBlend plot with a 33% reduction in P & K rates, increased soybean yields by an average of 8 bushels/per acre compared to the check plot which received full rates of P & K. This represents an average of \$51.03/acre more net profit each year. *5 Year Missouri research*

#### GRAPH

Conventional Research

USDA & University of Missouri

Replicated Research, 16 oz./acre of FoliarBlend applied at V3 and R4 growth stage. (p< 0.05)

Control Plot: 33.2 bushels/acre

FoliarBlend: 47.6 bushels/acre

Results using FoliarBlend on Soybeans: 14.4 bushels per acre increase!

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## THE RESULTS SPEAK FOR THEMSELVES!

### CORN

Two-year average from replicated USDA and University of Missouri research yielded an additional 17 bushel/acre in Roundup Ready corn.

FoliarBlend treated plots showed increased levels of Mn-reducing bacteria by an average 263% in corn.

Mn reducing bacteria transform manganese to plant available forms.

- *Two-year average, USDA & University of Missouri replicated study*

Increased corn yields by 14 bushels/acre at University of Missouri's Management System Evaluation Area (MSEA) University of Missouri.

#### GRAPH

Roundup Ready™ Research

USDA & University of Missouri

2008 Replicated Research, 16 oz./acre of Foliar Blend applied at V4 and V8 growth stage. (l.s.d. 0.05)

Control Plot: 199.4 bushels/acre

FoliarBlend: 224.1 bushels/acre

Results using FoliarBlend on Corn: 24.7 bushels per acre increase!

#### RICE

- 37% increase in dry biomass
- 33% yield increase

Rice Research Conducted by The College of Technical Engineering and Agriculture Cuu long Delta Rice Research Institute — Vietnam

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#### COTTON

FoliarBlend produced 90 pounds additional lint/acre over check plots (six-plot average) and 213 lbs. of additional seed cotton/acre.

- *University of Tennessee Extension*

Based on four replications, FoliarBlend increased lint yield by 120 lbs./acre and seed cotton by 267 lbs./acre.

- Shoffner Research Farm, Newport, AR

FoliarBlend plot produced 119 pounds additional lint/acre over check plot.

- Test replicated 4 times, University of Missouri

A single in furrow application of FoliarBlend produced 77 pounds additional lint/acre over check plot.

- Test replicated 4 times, University of Arkansas

#### WHEAT

18 bushels/acre increase over control and increase test weight from one spring foliar application.

- Irrigation Research Foundation; Yuma, Colorado

Graph

Research

Irrigation Research Foundation

2009 Research, 2 pints of FoliarBlend applied in 1 foliar application.

Control Plot: 57.5 bushels/acre

FoliarBlend: 75.71 bushels/acre

Results using FoliarBlend on Wheat: 18 bushels per acre increase!

**Healthier Soils | Stronger Plants | Higher Yields | Better Profits**

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## **MORE FOLIARBLEND CROP RESULTS...**

### **SNAP PEAS**

In 'Roma II' and 'Hialeah' varieties, FoliarBlend increased yields by 17.4 bushels/acre over the check plot. This represents an increase of \$144.25/acre in net profit.

*Test replicated 6 times.*

*University of Tennessee*

### **CARROTS**

FoliarBlend increased yields by 113% in weight and 16% in numbers in 'Fullback' carrots over the check plot.

*Test replicated 4 times.*

*SEMO State University*

### **ONIONS**

In a study comparing 16 different growth additives, FoliarBlend came out on top in all areas, producing the highest yield, grade and a profit of \$633/acre more than check plot.

*Test replicated 6 times.*

*Oregon State University*

FoliarBlend increased yields by 93% over the check plot.

*Test replicated 4 times.*

*SEMO State University*

### **TOMATOES**

FoliarBlend increased yields by 122% in weight and 104% in numbers in 'Husky' tomatoes.

*Test replicated 4 times.*

*SEMO State University*

## **POTATOES**

FoliarBlend increased premium potato yields by 36.8% and grade A potato yields by 26% compared to the check plot. This represented an increase of \$815/acre more profit.

*University of Florida/Wetumpka Fruit Co.*

## **WATERMELON**

In 'Jubilee' and 'Crimson Sweet' varieties, FoliarBlend produced 243 more melons/acre weighing an additional 5,940 pounds over the check plot.

*Test replicated 6 times.  
University of Tennessee*

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## **FoliarBlend vs. other nutritional supplements**

There are several nutritional supplement products on the market today that range from simple formulations containing products like beer, soap, apple cider and humic acid, to more sophisticated solutions that contain enzymes, amino acids and live species of beneficial bacteria. Some are effective, some are not; however, none are able to match the benefits of FoliarBlend when you compare cost, performance and ease of application. Unlike these other products, FoliarBlend utilizes a proprietary stabilization process that allows it to be tank mixed with core inputs. Being able to tank mix and apply FoliarBlend in conjunction with conventional liquid fertilizers, herbicides, fungicides and pesticides represents a significant savings in application costs alone.

When stored properly, FoliarBlend also has a guaranteed shelf life of four years which further separates it from other products on the market today. Many other products break down and lose their effectiveness in a short period of time. For some, deterioration and loss of efficacy can begin in less than 30 days. Should unforeseen circumstances prevent you from applying FoliarBlend this year, you can be assured that when stored properly, you will get 100% effectiveness next year!

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## **HOW TO USE FOLIARBLEND**

Apply to the soil, seed, and plant foliage. Total applications of 32 – 48 oz./acre are typical for field crops with 16 oz./acre applied broadcast or in furrow at planting, followed by one to two foliar applications at 16 oz./acre each. If only one foliar application is made, rates up to 32 oz./acre may be used.

FoliarBlend can be applied through standard ground or aerial application equipment and properly equipped irrigation systems. It is available in 2.5-gallon containers, 55-gallon drums, 275-gallon mini-totes or bulk tanker load quantities.

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### **FIELD CROP USAGE**

The applications listed may be applied in conjunction with corresponding conventional liquid fertilizer, herbicide, fungicide or insecticide applications.

**Directions for Use:** FoliarBlend may be applied by ground or air. If applied by air it is recommended to use a minimum of 5–10 gallons of water per acre. If applied by ground it is recommended to use 10–20 gallons of water per acre.

**Compatibility:** FoliarBlend is a stable product with excellent tank mixing characteristics. It can be applied in conjunction with most herbicides, insecticides, fungicides and foliar fertilizers. A jar test is recommended prior to tank mixing. Test results have shown that FoliarBlend can stimulate higher yields through increased nutrient uptake. It is not a replacement for conventional fertilizer. Soil sample regularly and use FoliarBlend in conjunction with good fertility practices.

#### **Wheat & Other Small Grains**

- Apply as a seed coating prior to planting with enough undiluted product to make seed damp to the touch, approximately 8 oz per bushel, then let dry or make an in furrow application at planting of 16 oz per acre. If an in furrow or seed treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16–24 ozs. per acre prior to jointing.
- Apply 16–24 ozs. per acre at the flag leaf stage. If Step 1 is missed, apply 32 ozs. per acre at the flag leaf stage.

#### **Cotton**

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16 ozs. per acre at the 3–7 leaf stage.
- Apply 16 ozs. per acre at the pinhead square stage.
- Apply 16 ozs. per acre at early bloom.

#### **Soybeans**

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16–32 ozs. per acre at the 3–5 trifoliate leaf stage.
- Apply a second application of 16–32 ozs. per acre at pre-bloom to pod set. If Step 1 is missed, apply 32 ozs. per acre prior to bloom.

#### **Corn & Grain Sorghum**



- Apply as a seed coating prior to planting with enough undiluted product to make seed damp to the touch, approximately 6-8 oz per 50lb bag, then let dry or make an in furrow application at planting of 16 oz per acre. If an in furrow or seed treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16–24 ozs. per acre at the 3–5 leaf stage.
- Apply 16–24 ozs. per acre anytime from pre tassel to just after pollination has completed.

#### **Rice**

- Apply as a seed coating prior to planting with enough undiluted product to make seed damp to the touch, approximately 8 oz per bushel, then let dry or make an in furrow application at planting of 16 oz per acre. If an in furrow or seed treatment is not possible, soil apply 16 – 32 ounces pr acre with preplant or preemerge chemicals.
- Apply 16–32 ozs. per acre when the rice seedling has 3 fully emerged leaves but before the seedling has completed development of 7 leaves or 3 tillers.
- To boost yields, apply at the rate of 16–32 ozs. per acre immediately after internode elongation or joint movement has begun.

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#### **Tobacco**

- Apply 16 ozs. of FoliarBlend per 100 gallons of setting water.
- Apply 16 – 32 ounces per acre with preplant herbicide.
- Apply 16 ounces per acre with each foliar spray made with conventional liquid fertilizer or insecticide.

#### **Sunflowers & Oilseeds**

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16 ozs. per acre at 4–8 inches in growth.
- Apply 16 ozs. per acre at flowering stage.

#### **Peanuts**

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16 ozs. per acre at the 3–5 leaflet stage.
- Apply 16 ozs. per acre at initial pegging.
- Apply 16 ozs. per acre 10–14 days after the second foliar application.
- Apply 16 ozs. per acre during pod fill.

#### **Alfalfa, Hay & Forage Crops**

- Apply as a seed coating prior to planting with enough undiluted product to make seed damp to the touch, approximately 8 oz per 50 lb bag, then let dry or make an in furrow application at planting of 16 oz per acre. If an in furrow or seed treatment is not possible, soil apply 16 – 32 ounces per acre broadcast with preplant or preemerge chemicals.
- Apply 16–32 ozs. per acre in the spring as soon as growth begins and continue applying 16 ozs. per acre 7-10 days after each cutting or heavy pasturing.

#### **VEGETABLE USAGE**

The applications listed may be applied in conjunction with corresponding conventional liquid fertilizer, herbicide, fungicide or insecticide applications.

Directions for Use: FoliarBlend may be applied by ground or air. If applied by air it is recommended to use 5–10 gallons of water per acre. If applied by ground it is recommended to use 10–20 gals. of water per acre. FoliarBlend may also be applied through properly equipped irrigation and fertigation systems.

Compatibility: FoliarBlend is compatible with most herbicides, insecticides, fungicides and foliar fertilizers. A jar test is recommended prior to tank mixing. Test results have shown that FoliarBlend can stimulate higher yields through increased nutrient uptake. It is not a replacement for conventional fertilizer. Soil sample regularly and use FoliarBlend in conjunction with good fertility practices.

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### Edible Beans — Green, Lima, Dry, Snap, Pintos, Black Turtles, Marrowfats, Great Northern, Navy, Yellow Eyes, Kidney, Garbanzo & Seed

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16–32 ozs. per acre when the first trifoliate is unfolded.
- Apply 16–32 ozs. per acre 2 weeks after Step 1.
- Apply 16–32 ozs. per acre at first bloom.

### Carrots, Onions, Leeks, Radish Sugarbeets, Parsnip, Rutabaga & Turnips

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16-32 ozs. per acre at 3-4 inches in growth.
- Apply 16-32 ozs. per acre 2–3 weeks after Step 1.
- Apply 16-32 ozs. per acre 2-3 weeks after Step 2.

### Broccoli, Cauliflower, Cabbage, Lettuce & Spinach

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16-32 ozs. Per acre when 4–6 true leaves are formed.
- Apply 16-32 ozs. per acre 2 weeks after Step 1.
- Apply 16-32 ozs. per acre 2 weeks after Step 2.

NOTE: To maximize yields, make continuous applications of 16 ozs. per acre at 7–10 day intervals after the first application throughout the growing season.

### Cantaloupe, Pumpkins, Watermelon, Honeydew, Cucumber & Squash

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16-32 ozs. per acre when the 3rd leaf begins to unfold.
- Apply 16-32 ozs. per acre 2–3 weeks after Step 1.
- Apply 16-32 ozs. per acre 2–3 weeks after Step 2.

NOTE: To maximize yields, make continuous applications of 12–16 ozs. per acre at 7–10 day intervals after the first application throughout the growing season.

#### Pepper, Tomato, Eggplant & Okra

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16-32 ozs. per acre when the plant has 3–4 true leaves.
- Apply 16-32 ozs. per acre at first bloom.
- Apply 16-32 ozs. per acre at first fruit set.

NOTE: To maximize yields, make continuous applications of 12–16 ozs. per acre at 7–10 day intervals after the first application throughout the growing season.

#### Sweet Corn & Popcorn

- Apply as a seed coating prior to planting with enough undiluted product to make seed damp to the touch, approximately 6- 8 oz per 50lb bag, then let dry or make an in furrow application at planting of 16 oz per acre. If an in furrow or seed treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16-32 ozs. per acre when plants are in the 4–6 leaf stage.
- Apply 16-32 ozs. per acre at the 8–10 leaf stage.

#### Potatoes

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16-32 ozs. per acre at tuber initiation (approximately 4–6 weeks after emergence.)
- Apply 16-32 ozs. per acre at pre-bloom stage.
- Apply 16-32 ozs. per acre during bloom.

#### Sweet potato

- Treat slips prior to transplanting with a 2% solution of FoliarBlend
- Apply 16 – 32 oz per acre to beds prior to or during transplanting.
- Apply 16-32 ozs. per acre after 3rd new leaf
- Apply 16-32 ozs. per acre at pre-bloom stage
- Apply 16-32 ozs. per acre during bloom

#### FRUIT AND NUTS USAGE

The applications listed may be applied in conjunction with corresponding conventional liquid fertilizer, herbicide, fungicide or insecticide applications.

**Directions for Use:** FoliarBlend may be applied by ground or air. If applied by air it is recommended to use 5–10 gallons of water per acre. If applied by ground it is recommended to use 10–20 gals. of water per acre.

**Compatibility:** FoliarBlend is compatible with most herbicides, insecticides, fungicides and foliar fertilizers. A jar test is recommended prior to tank mixing. Test results have shown that FoliarBlend can stimulate higher yields through increased nutrient uptake. It is not a replacement for conventional fertilizer. Soil sample regularly and use FoliarBlend in conjunction with good fertility practices.

#### **Dates, Figs, Olives, Persimmons & Pomegranates**

- Apply 16–32 ozs. per acre during pink bud stage.
- Apply 16–32 ozs. per acre every 2–3 weeks up to harvest.

#### **Apples & Pears**

- Apply 16–32 ozs. per acre at green growth (tight cluster) stage.
- Apply 16–32 ozs. per acre at pre-bloom stage.
- Apply 16–32 ozs. per acre at half bloom stage.
- Apply 16–32 ozs. per acre at 3/4 petal fall.
- Apply 16–32ozs. per acre at young fruit stage.

#### **Wine, Table Grapes & Kiwifruit**

- Apply 16–32 ozs. per acre at the start of spring growth.
- Apply 16–32 ozs. per acre at pre-bloom stage.
- Apply 16–32 ozs. per acre at fruit set.

#### **Almonds, Pecans & Walnuts**

- Apply 16–32 ozs. per acre at early bloom.
- Apply 16–32 ozs. per acre every 4–6 weeks until after nut fill.

#### **Citrus & Avocados**

- Apply 16–32 ozs. per acre pre-bloom
- Apply 16–32 ozs. per acre at full bloom – 2/3 petal fall.
- Apply 16–32 ozs. per acre when fruit is approximately 1/2 inch in diameter.

#### **Peaches, Nectarines, Apricots & Cherries**

- Apply 16–32 ozs. per acre at pre- to early bloom stage.
- Apply 16–32 ozs. per acre at petal fall.
- Apply 16–32 ozs. per acre at young fruit stage.

#### **Plums & Prunes**

- Apply 16–32 ozs. per acre at white bud stage.
- Apply 16–32 ozs. per acre at early bloom.
- Apply 16–32 ozs. per acre at petal fall.
- Apply 16–32 ozs. per acre at fruit set.

#### **Berry Bushes**

- Apply 16–32 ozs. per acre at leaf initiation.
- Apply 16–32 ozs. per acre at early bloom stage.
- Apply 16–32 ozs. per acre at late petal fall.
- Apply 16–32 ozs. per acre at fruit set.

### **Strawberries**

- Apply 24–32 ozs. per acre as soon as there is sufficient foliage to absorb spray.
- Apply 24–32 ozs. per acre at first bloom stage.
- Apply 24–32 ozs. per acre at fruit set.

NOTE: Sprays can continue every 14 days through harvest.

## **Page 29**

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Headquartered in Doniphan, Missouri, Agri-Gro Marketing, Inc. has grown to become a global company with sales in six continents.

### **WHO WE ARE**

Agri-Gro Marketing, Inc.®

For more than 30 years, Agri-Gro Marketing, Inc., has established a tradition of excellence, manufacturing an ever-increasing line of innovative products that offer unmatched value for the global marketplace. Over that time, we have become leaders in the field of agricultural and horticultural plant/soil nutrition. Thanks to the development of innovative products like FoliarBlend, producers around the globe can grow higher quality, better yielding crops while reducing production costs and the need for chemical inputs.

Quite simply, our technology helps growers create healthier, more balanced soils and plants that produce higher yields with superior quality. Most of the focus in agriculture is on the chemical and physical aspects of the production process and rightfully so, they are truly important. However, in order to maximize any plant's yield potential one must look beyond just the physical and chemical and consider the biological element of crop production as well. This is an essential area of crop production that many growers overlook and why FoliarBlend was developed. It is a truth, FoliarBlend does what conventional N-P-K fertilizers and physical tillage alone cannot.

Our products have been tested by the USDA and numerous state universities and proven under field conditions to perform as claimed. FoliarBlend improves the yield and quality of grain, fruit, vegetable and horticultural crops while decreasing conventional fertilizer requirements and the need for chemical inputs. Our products are environmentally safe, non-toxic, noncarcinogenic and contain no patho-genic micro-organisms.

### **Back Cover Text**

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For more information on additional products by Agri-Gro Marketing, Inc. visit [www.agrigro.com](http://www.agrigro.com)

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## FoliarBlend Main Brochure

Front Cover ~~Text~~

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### BIGGER YIELDS FROM THE GROUND UP

Healthier Soils ~~-~~ Stronger Plants ~~-~~ Higher Yields

### BIGGER YIELDS FROM THE GROUND UP

FoliarBlend® by Agri-Gro®

~~P.~~Page 2 ~~Text~~

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YOU'RE ALREADY STANDING ON THE KEY TO BIGGER YIELDS AND BETTER PROFITS

In order for growers to maximize their yield and profit potential, they must look beyond the standard options to their soil and plant's biological systems.

~~P.3~~Text

### Page 3

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Today's farming environment has become a survival of the fittest with growers pushing the limits to get the most from every acre of production. In the last decade, significant technological advances have been made that push limits further than ever before. When you consider the numerous advancements in farm equipment, plant genetics and chemicals ranging from herbicides to fungicides to insecticides, the choices and technologies available to today's farmer are staggering.

In order for growers to maximize their yield and profit potential, they must look beyond the standard options like the newest trend in equipment, the latest seed genetics or the hottest chemical that promises to solve their problems. Even bumping conventional (N-P-K) fertilizer ~~(N-P-K)~~ rates, expecting yields to jump accordingly, is simply not the answer to better profits and higher yields. To truly maximize yield and increase profit margin, one must look beyond the obvious physical and chemical fixes, and consider the critical role the soil's biological life plays in crop production. In fact, many yield ~~and disease~~ problems are caused by the neglect of this essential component in crop production which, unfortunately, is all too often overlooked by most growers.

What if you could simply tank mix a product to your normal spray program that has a targeted effect on the soil and plants' biological system — one that improves soil structure, promotes healthy soil for better growing conditions, increases fertilizer efficiency, improves supports vibrant and robust plant growth, and boosts yields ~~and lowers disease pressure~~? FoliarBlend® is designed to do just that and more. FoliarBlend does what chemicals, conventional fertilizer and physical tillage alone can't, and it fills a

growing void that is missing in today's agriculture. Don't let the name mislead you. FoliarBlend is just as effective in the soil as it is on the plant. Smart growers looking for an edge are quickly discovering just how rewarding FoliarBlend can be, both in the field and in the bank.

## ~~THE BIOLOGICAL EDGE~~

### The Biological Edge

All too often, the biological component of plant growth is an overlooked key to increasing yield and profits. When equally addressed along with the physical and chemical aspects of crop production, the results can be significant in terms of yield and profit.

~~THE THREE SOIL PROPERTIES: Chemical, Physical, Biological~~

~~P.4 Text~~

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## ~~FACING THE CHALLENGE~~

~~The 3 Soil Properties: chemical, physical, and biological.~~

~~Page 4~~

### Facing the Challenge

Extreme temperatures, adverse weather conditions, disease, insect pressure, inadequate and imbalanced plant nutrition -- all of these conditions can rob your crops of the yield and profits you deserve. When applied as part of a good management program, FoliarBlend works to keep your plants and the immediate soil environment, "spiked up" with the ~~nutrition and growth~~ nutritional supplements required to maximize yield and ~~minimize support~~ plant ~~stress~~ health.

FoliarBlend simply helps ~~a plant to your crop~~ reach its genetic yield potential by boosting plant growth, increasing nutrient uptake, ~~strengthening the plants' natural defense system~~ supporting plant health and quality, and building a healthy, ~~disease-suppressive~~ growing environment. Research has proven that crops treated with FoliarBlend are healthier ~~and experience less disease pressure~~, have improved nutrient uptake and availability, ~~establish larger root systems with stronger stalks~~ plant growth and higher yields.

FoliarBlend represents a new generation of ~~bio-stimulant~~ technology. ~~Containing, containing~~ complex carbohydrates, ~~plant~~ essential plant macro and micronutrients, a proprietary blend of beneficial enzymes, amino acids and a host of ~~naturally-occurring plant and soil stimulants~~ nutritional supplements not found in ordinary N-P-K fertilizers. FoliarBlend has a profound effect on both the plant's and the soil's ~~microbial~~ environment.

~~P.5 Text~~

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## ~~PERFORMANCE IN THE FIELD~~

~~Page 5~~

## Performance in the Field

Field tests show that FoliarBlend, when added to full or reduced rates of conventional fertilizer, has consistently outperformed full rates of N-P-K alone. Research and grower testimonials also indicate that FoliarBlend is superior to other ~~bio-stimulant~~competitive technologies, especially when comparing its ease of application, impact on yield, effect on ~~plant and~~growing conditions in the soil ~~health~~, the cost savings received from reduced conventional fertilizer and chemical inputs, and the return on investment from using the product.

## ~~COST SAVINGS YOU CAN SEE~~

### Cost Savings You Can See

FoliarBlend is cost effective for virtually any grower regardless of size. Growers routinely report a profit from FoliarBlend from the savings they realize in conventional fertilizer and chemical inputs alone. When you add FoliarBlend's impact on yield, the financial return can be significant. In fact, we feel a grower should receive a "minimum" of \$3 returned for every \$1 spent on FoliarBlend or else we are simply not doing our job. Most growers discover their return to be far greater, especially in high value specialty crops like fruits and vegetables.

## ~~TESTIMONIAL~~

### Testimonial:

"If you do a test plot with FoliarBlend, it will prove itself and put more money in your pocket. It pays for itself in a hurry if you use it right."

- Les Thomas, ~~(Missouri rice and soybean producer)~~

## "UNLOCK YOUR CROPS' POTENTIAL AND BANK ON BIGGER YIELDS."

### Page 6

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None

~~P, Page 7-Text~~

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Healthier Soils | Stronger Plants | Higher Yields | Better Profits

## ~~BENEFITS AT A GLANCE~~

### Benefits at a Glance

- ~~—~~ Better yields, higher test weight and greater crop quality as a result of improved plant nutrition.

- ~~Triggers an explosion of beneficial soil bacteria which speeds up the breakdown of crop residue, builds humus and improves soil structure, drainage and tilth.~~
- ~~Increases healthy indigenous microbial activity in the soil or growing medium with increases of 3400% demonstrated within three days of application.~~
- ~~Improves nutrient release and solubility by up to 60% compared to non-treated soils by speeding up the breakdown and improving the availability of both naturally occurring and applied nutrients. Depending on soil test levels, growers may be able to reduce P & K inputs up to 50%.~~
- ~~Improves germination, plant emergence and promotes vigorous root growth up to 50%. Supports overall plant development.~~
- ~~Elevates the plants' natural defense mechanisms, improving Supports plant health, minimizing disease, insect pressure and the effects of weather-related stress. Many growers with disease pressure report a reduction in fungicide use by 50% or more.~~
- ~~Offsets the negative effect of glyphosate by minimizing "yellow-flash" ~~and reducing soil pathogen counts including Fusarium and Pythium species.~~~~
- ~~Lowers sodium levels in the soil ~~and has shown to reduce nematode counts.~~~~
- ~~Derived from many different types of beneficial bacteria—including aerobic and anaerobic microorganisms—the product is effective in both well drained and tight soils.~~
- ~~A source of essential micronutrients, proteins, enzymes, amino acids and complex carbohydrates not available in ordinary N-P-K fertilizers.~~
- ~~Can be easily applied in conjunction with other liquid applications, pesticides, herbicides, fungicides and conventional fertilizers through ground, air or fertigation systems.~~
- ~~When stored properly, FoliarBlend has a shelf life of four years without losing effectiveness.~~

P.8 Text

## ~~FOLIARBLEND WORKS THE WAY NATURE INTENDED~~

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### Page 8

#### FoliarBlend Works The Way Nature Intended

FoliarBlend delivers a wide range of benefits for growers who want to create a healthier, more efficient growing environment and maximize their return on investment. University research, as well as independent field trials by growers around the world, show that regular use of FoliarBlend contributes to better fertilizer utilization, improved plant growth and vigor, ~~increased root development~~, better soil conditions, ~~less disease and insect pressure~~, higher yields and better crop quality.

#### SOIL APPLICATION

#### IT'S ABOUT GETTING WHAT YOU'VE ALREADY PAID FOR



If your soil is like most, you probably have an abundance of insoluble nutrients that are not available to your crops. Many of these nutrients are fertilizers you've invested in but are receiving no benefit from. FoliarBlend can access these nutrients and put them to work for your crop this growing season.

When soil applied or placed in furrow at planting, the active ingredients in FoliarBlend trigger natural biological processes that create an explosion of beneficial microbial growth of 3,000% or more within the first 72 hours of application. This increased enzymatic and microbial activity works to release insoluble nutrients in the soil and convert them to a soluble form plants can utilize. By improving the uptake and availability of applied fertilizers and those nutrients presently in the soil, FoliarBlend helps "Get What You're Paying For" out of the soil and into the plant. This tremendous increase in the availability of nutrients has a direct effect on the growth and development of your crops, resulting in healthier, higher quality plants with better yields. By improving nutrient uptake, the yield and quality of forage and feed crops are also improved considerably. Increases in tonnage of 10 to 20% and relative feed values of 20 to 50 points are quite common with FoliarBlend on these type of crops.

University testing has proven that when applied broadcast to the soil or placed in-furrow at planting, the active ingredients in FoliarBlend create significantly higher concentrations of available nitrogen, calcium, copper, potassium, magnesium, manganese, phosphorus, boron, molybdenum, iron and zinc compared to untreated soils. FoliarBlend ~~also boosts the concentration~~ makes more of these nutrients available for deposit in the vegetative tissue as well, having a positive result on yield, test weight and quality.

#### CHART/GRAPH

#### % of Change ~~in~~ of Nutrient Availability using FoliarBlend.

- Ammonium 26.89
- Nitrate 3.74
- Phosphorous 31.04
- Potassium 30.95
- Calcium 55.61
- Magnesium 42.93
- Boron 11.29
- Manganese 68.15
- Copper 19.05
- Iron 52.94
- Sodium 16.80
- Zinc 25.23
- Molybdenum 50.00

[see chart on page 9]

In a detailed University study, the ingredients in FoliarBlend significantly increased the uptake and availability of 12 macro and micronutrients while lowering the levels of sodium in the soil and plant tissue. Conclusion: FoliarBlend not only improves yield and plant growth, but has the potential to reduce environmental pollution by more efficient utilization of fertilizer nutrients and thus the potential reduction of applied conventional fertilizers.

*Research conducted by Lincoln University, Jefferson City, MO/David Sasseeville Ph. D.*

P.10 Text

## ~~INCREASED MICROBIAL ACTIVITY, IMPROVED NUTRIENT CYCLING AND BETTER RESIDUE MANAGEMENT~~

Page 10

### Increased Microbial Activity, Improved Nutrient Cycling and Better Residue Management

In nature, when plants and animals expire, over time they decay with exposure to water, sun, air and the family of naturally occurring microorganisms called decomposers. However, in most commercially farmed soils, biological activity in the soil has become very low. This leaves partially decomposed organic matter and crop residue to accumulate, minimizing the soil's effectiveness to transfer nutrients and ~~increasing the risk of seedling disease~~ creating less than ideal growing conditions generally. The result is a greater dependence on applied fertilizers and chemical fungicides to sustain favorable growing conditions.

FoliarBlend re-invigorates this natural biological process by increasing the populations of indigenous decomposing microorganisms in the soil. In fact, research by EMSL Labs, New York, NY, verified FoliarBlend was able to stimulate microbial activity by 3400% within 24 hours of application. This improves the natural bio-degradation process which allows the earth to recycle itself, resulting in more organic matter and the production of humus, a valuable source of plant nutrition. By stimulating microbial activity, crops benefit from an increase in available nutrients as well as the production of plant beneficial proteins, and enzymes, ~~antibiotics, and growth stimulants~~ and physical improvements to the soil strata these microbes generate. The plant/soil system becomes healthier and more efficient in its uptake of nutrients, requiring less water and ~~applied fertilizers~~ less conventional N-P-K fertilizer to produce higher crop yields.

## ~~QUALITY OVER QUANTITY – More of the Good, Less of the Bad~~

### Quality over Quantity

While high microbial populations in a growing environment are important, a better indication of a soil's health and production capabilities are the types of microbes involved. This brings to light another



advantage of FoliarBlend, the ability to ~~minimize disease and soil borne pathogens while elevating the numbers~~elevate the number of beneficial species. ~~In numerous replicated studies, the ingredients in FoliarBlend have demonstrated the ability to significantly lower several groups of deleterious and disease causing microbes in a variety of soil types.~~

## **~~FOLIARBLEND REDUCED LEVELS OF FUSARIUM COLONIZATION BY 66% IN USDA-ARS RESEARCH.~~**

~~P.~~Page 11 ~~Text~~

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~~CHART/GRAPH~~

### **~~DELETERIOUS SOIL BACTERIA COUNTS AFTER 1 YEAR WITH FOLIARBLEND~~**

~~CFU/g soil~~

~~The above chart demonstrates FoliarBlend's ability to suppress soil borne pathogenic microbes in both low yielding and high yielding soils. This represents a 63% reduction in the low yielding soils and 92% reduction in high yielding soils. Study performed in Florida.~~

- ~~■ Low Yield + FoliarBlend~~
- ~~■ Low Yield Control~~
- ~~■ High Yield + FoliarBlend~~
- ~~■ High Yield Control~~

~~Research by David N. Sasseville, Ph.D.~~

## **SOIL BENEFITS AT A GLANCE**

Soils with low levels of microbial activity will not be as productive as those with elevated levels of beneficial micro-organisms, regardless of the amount of conventional fertilizer applied.

- ~~■ Improves soil structure; tilth, porosity and friability.~~
- ~~■ Assists in seed germination and early plant growth.~~
- ~~■ Improves plant growth and development ~~of root systems~~.~~
- ~~■ Improves the availability of resident soil minerals and fertilizer materials.~~
- ~~■ Aids in the detoxification of pollutants (chemical residues, salts).~~
- ~~■ Improves natural resistance to pests and drought.~~
- ~~■ Suppresses soil borne pathogens reducing the need for chemical pesticides and fungicides. Promotes overall plant and soil health.~~
- ~~■ Minimizes the impact of pH extremes.~~
- ~~■ Improves water management within soil.~~
- ~~■ Improves crop quality and yields.~~

## FOLIAR FEEDING: AN IMPORTANT LINK TO HEALTHIER PLANTS & HIGHER YIELDS

What can you do to maintain top Yield Potential? The best defense against yield loss ~~and disease~~ is a healthy plant. Maintaining a high nutrient content helps to ensure plant health. Compatible with most conventional liquid fertilizers, and chemicals, FoliarBlend is an easy way to improve plant growth, yield and quality. Applications timed before or during key growth stages in crop development or nutrient demand can help plants overcome "hidden hunger," where nutrient availability falls short of crop demand for top yields.

Plants seldom have all the nutrition or energy they need to maintain all the blooms or kernels they have initiated. Too often, many of the blooms fall off or kernels slough off in the early stages of development and yields suffer. FoliarBlend can help ~~the plant hang on to more flowers or kernels and keep pushing~~ prevent against bloom and kernel loss resulting from inadequate nutrition and support your crops through critical stages of growth for increased yields.

~~Designed for rapid absorption on the plant's leaf surface, the nutrients and growth stimulants found in FoliarBlend enhance photosynthesis and the plant's ability to provide carbohydrates, proteins and other needed growth compounds. These essential compounds are then transferred throughout the plant including the root system. From the root system, some of these move out into the rhizosphere (the soil zone that surrounds the roots), feeding bacteria, algae, fungi and protozoa which in turn produce a broad spectrum of beneficial enzymes, organic acids, antibiotics and other valuable growth stimulants. These compounds are re-absorbed by the roots and transported back throughout the plant system increasing yields and producing healthier, nutrient rich crops the way nature intended.~~

FoliarBlend can be compared to ~~an immunization shot~~ a multi-vitamin, ensuring the plant's ~~defense systems are in a high state of readiness~~ is as prepared as possible to respond when stress ~~occurs~~ strikes.

## ~~IT'S LIKE AN IMMUNIZATION SHOT FOR PLANTS~~

### It's Like a Multi-Vitamin For Plants

It bears repeating, the best defense against yield loss ~~and disease is a healthy plant. FoliarBlend supplies nutrition and powerful growth stimulants, but it also has ingredients designed to activate and strengthen the plant's natural defense system. A unique and proprietary benefit of FoliarBlend is its ability to induce Systemic Acquired Resistance (SAR) when applied to the plant's foliage. Regular applications elevate the plant's natural defense system against a range of disease causing fungi, bacteria and viruses~~ is a healthy plant.

Regular applications of FoliarBlend support overall plant health. This also improves the plant's ability to better withstand environmental stress ~~and may reduce the impact of insect damage on crops.~~

## FOLIAR BENEFITS AT A GLANCE

- ~~■~~ Boosts yields and supports plant health.
- ~~■~~ Tank mixes with most all conventional liquid fertilizers and chemicals for easy application.
- Supports optimal photosynthetic activity.
- ~~■~~ Improves ~~photosynthesis.~~ plant growth.
- ~~■~~
- Supplies essential plant nutrition for healthier plants.
- Improves ~~root development.~~
- ~~■~~ ~~Strengthens plants and improves natural resistance to disease, pests and stress, reducing the need for chemical pesticides and fungicides.~~
- ~~■~~ ~~Stimulates vegetative plant growth.~~
- ~~■~~ ~~Stimulates reproductive plant growth.~~
- ~~■~~ ~~Stimulates plant metabolism.~~
- ~~■~~ ~~Enhances cell division and elongation.~~ overall yields and crop quality.

Page 14 ~~Text~~

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## ENVIRONMENTAL EFFECT: FOLIARBLEND'S IMPACT ON WATER

FoliarBlend is designed to safely promote plant growth, improve soil conditions and enhance water conservation.

Real world experience has shown that the addition of FoliarBlend as part of a comprehensive fertilization program may help reduce water consumption in some cases by as much as 30%! While the exact level of water reduction will be affected by many variables, you can count on FoliarBlend's ability to improve ~~the~~ water efficiency ~~of plants~~ in the following ways:

- ~~■~~ ~~Increases root mass; improving~~ Supports efficient water uptake and absorption.
- ~~■~~ ~~Better~~ Supports optimal water regulation and retention within the plant.
- ~~■~~ Improved porosity, friability and drainage in the soil.

Real world experience has shown that the addition of FoliarBlend may help reduce water consumption by as much as 30%!

~~FoliarBlend also contains natural plant growth stimulants that trigger root growth and development.~~

~~P,~~

Page 15 ~~Text~~

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**~~INCREASES ROOT MASS, IMPROVING WATER UPTAKE AND ABSORPTION.~~ Supports efficient water uptake and absorption.**

FoliarBlend increases the availability of phosphorus and other essential plant nutrients in the soil. Phosphorus is important in root growth and development. ~~When~~ root growth ~~and development~~. ~~With increased root growth~~ is optimized, there is a larger root surface with which to take up water and other nutrients, making the plant more efficient. ~~With a more~~ Providing plants with enough phosphorus to meet their demand allows plants to grow to their fullest capacity, including the most extensive root system; ~~the roots occupy~~ they are capable of – a more robust root system occupies a larger volume of soil, which in turn, increases the volume of water available to the plants. ~~FoliarBlend also contains natural plant growth stimulants that trigger root growth and development.~~

**~~BETTER WATER REGULATION AND RETENTION WITHIN THE PLANT.~~ Supports optimal water regulation and retention within the plant.**

FoliarBlend influences other essential plant nutrients making them more available to plants. For example, FoliarBlend increases potassium levels in the plant. Potassium

regulates water uptake by controlling transpiration through the leaves. Potassium also helps to move nutrients into and within the plant. Other plant nutrients, such as calcium, influence the thickness of cell walls and also the thickness of the cutin layer on leaves, stems and fruits. The cutin layer is the waxy surface on plants that reduces water loss.

**IMPROVED POROSITY, FRIABILITY AND DRAINAGE IN THE SOIL.**

FoliarBlend increases the porosity of many soils and makes the soil looser. Roots have difficulty penetrating heavy clay soils. FoliarBlend increases the friability (looseness) of soils enabling roots to be longer, deeper, and more branched. This increased root growth increases the surface area of the roots, the volume of soil and amount of water available to the plant. Another aspect of increasing friability is that with increased air space, the water holding capacity of the soil also increases. Thus, there is more water available to the roots in a given volume of soil. As the soil becomes more porous, water more easily drains from the soil. While this would appear to have a negative effect on water conservation for lawns and gardens, it does not. Plant roots require oxygen to grow and thrive. They require oxygen to take up plant nutrients and water. If the soil around the roots is too wet (a condition called “wet feet”), the plants do not have enough energy (from respiration) to take up water and essential nutrients. That is why over-watering can cause a plant to wilt. Poorly drained clay soils tend to become wet and stay wet, making it difficult for plants to take up water. What is needed is a balance between water and air in soil pores. FoliarBlend, by increasing friability, porosity, and good drainage, helps increase the water efficiency of plants and contributes to water conservation.

#### **FOLIARBLEND OFFSETS THE YIELD DRAGGING EFFECTS OF GLYPHOSATE.**

Research has shown that Glyphosate, the active ingredient in Roundup®, can suppress the formation of nitrogen nodules on soybean roots and temporarily weaken the plant's immune response and defense mechanisms. This negative effect is further magnified when conditions place the plant under stress from environmental conditions or attack from pests or disease.

Hundreds of university and independent studies have shown there is a yield drag of 5 to 10% with Roundup Ready® (RR) varieties compared to comparable conventional varieties grown under similar and favorable conditions. Ongoing research on yield drag in RR soybeans points to the following ~~four~~ possible explanations detailed on the ~~following~~next pages.

#### **P.17 Text- FOLIARBLEND OFFSETS THE YIELD DRAGGING EFFECTS OF GLYPHOSATE.**

##### Page 17

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First, Glyphosate is a strong chelating agent which binds divalent micronutrients in the plant, especially manganese and iron. Flashing or yellowing of young leaves of RR crops is often the result of glyphosate binding these divalent micronutrients.

[IMAGE p 17]

~~Photo from Dr. Don Huber.~~

Caption: Dark ~~areas not treated~~Areas Not Treated with Glyphosate.

While FoliarBlend contains a variety of micronutrients, it may not be sufficient to overcome a severe nutrient deficiency in the soil or plant. Only soil testing and tissue analysis can determine the adequacy of available nutrients for optimum plant nutrition.

Second, Glyphosate, the active ingredient in Roundup®, can suppress the formation of nitrogen nodules on soybean roots. This reduction decreases the amount of nitrogen available to the soybean plant and can reduce yields. This effect from applied glyphosate is greater when the crop is under stress from conditions such as drought. The effect of glyphosate is likely on the suppression of rhizobium, the symbiotic bacteria required for nodulation, but it may also be from a broader effect on the normal physiology of the soybean plant.

Third, Glyphosate application temporarily weakens the RR soybean plant's immune response and defense mechanisms, especially when conditions place the plant under stress from environmental conditions or attack from pests or disease. With the plant's ability to defend itself at a weakened level, the plant is more susceptible to disease and insect pressure resulting in yield loss.

##### P. Page 18 Text

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Fourth, in addition to suppressing the plant's natural defense system, research indicates that glyphosate also promotes the proliferation of opportunistic disease-causing pathogens in the soil, most notably the *Fusarium* and *Pythium* spp. Studies reveal that RR soybean plants treated with glyphosate have much higher levels of these pathogens on the roots compared to RR soybean plants not sprayed with glyphosate. While RR soybean plants are not normally killed by these diseases, the plants must use valuable energy to protect themselves from these pathogens, which likely contributes to yield reductions.

#### IMAGE

##### Fusarium Colonies on RR Soybean Roots

- Check
- Glyphosate
- Glyphosate + FoliarBlend

Research by USDA-ARS, Columbia, MO

#### FOLIARBLEND REDUCES THE PATHOGENIC STRESS ON RR SOYBEAN PLANTS CAUSED BY GLYPHOSATE.

In 2006 through 2008, research was conducted between the University of Missouri and the USDA-ARS in Columbia, Missouri. The purpose of this research was to track FoliarBlend's impact on crop yield along with measuring its ability to reduce pathogenic *Fusarium* colonies around the roots of RR soybean plants. As evidenced by the photographs above, fungal populations around the roots of RR soybeans treated with glyphosate were significantly higher compared to the check RR soybeans not treated with glyphosate. However, on RR soybeans treated with both glyphosate and FoliarBlend, the fungal populations were comparable to the non-treated roots demonstrating FoliarBlend's ability to reduce the pathogenic stress on RR soybean plants caused by glyphosate. In fact, this trend held consistent throughout the entire course of the study with FoliarBlend reducing *Fusarium* colonies in 100% of the test strips in 2006–2008. The average count of *Fusarium* colonies on the soybean roots over the entire 3-year study was 103.1 CFU/100 cm of roots for the glyphosate control plot and 48.6 CFUs for the FoliarBlend treated plot.

#### P.19-Text

##### SO, WHAT CAN FOLIARBLEND DO TO HELP?

FoliarBlend contains numerous chelated micronutrients, including manganese and iron, which can reduce the nutrient tie up effect caused by glyphosate on RR crops. Since the micronutrients in FoliarBlend are chelated, it can be tank mixed with glyphosate to minimize "yellow flash" symptoms without reducing the efficacy of the herbicide. ~~In fact, most growers report improved herbicide performance and weed control when glyphosate is applied in conjunction with FoliarBlend.~~ For added insurance against "yellow flash" symptoms and resulting yield drag, it is advisable to add AgriGuardian™ Micro Mix to all glyphosate applications. Field trials have shown the combination of FoliarBlend and Micro-Mix can further enhance yield, support plant health and improve crop quality.

Glyphosate kills by shutting down the natural defense system within the targeted weed species. This is done by chelating and making unusable — key micronutrients required by certain biochemical pathways within the plant. ~~Another primary target of glyphosate is to shut down the Shikimate Pathway within the plant. This pathway produces Salicylic Acid, the signaling compound known to activate SAR (Systemic Acquired~~



Resistance) within the plant. SAR in turn activates the plant's natural defense system which can provide long lasting, broad-based resistance to environmental stress and disease causing pathogens.

While RR crops can tolerate glyphosate without being killed, evidence shows that glyphosate does suppress the plant's natural defense system and a real Yield Drag...

#### P.20 Text

...effect does exist. By glyphosate temporarily suppressing the shikimate pathway, the plant cannot produce salicylic acid. Without salicylic acid, the plant's natural defense system (SAR) cannot be activated, leaving the plant more susceptible to yield loss from environmental stress and attack from various pests and disease causing pathogens. FoliarBlend contains salicylic acid, the signaling compound that glyphosate suppresses in order to kill plants. The level of salicylic acid in FoliarBlend is sufficient to sustain plant vigor and elevation of the RR plant's natural defense system, yet it does not limit, nor prevent, the herbicidal action on the targeted weeds.

### **AN OUNCE OF PREVENTION...**

#### An Ounce of Prevention

While plants have a natural defense system (SAR) to fight off stress from disease and adverse conditions, their defense system is not activated until the plant actually comes under stress from disease or environmental stress. In other words, the plant's ability to fight off disease and stress is delayed until the attack strikes, catching the plant in a low state of readiness to ward off the effect and minimize yield loss. The ingredients in FoliarBlend actually engage and elevate the plant's natural defense system prior to any period of stress. This makes the plants stronger, healthier and counteract the impact of glyphosate by providing the essential nutrients affected by glyphosate. These nutrients support plant health, making plants better prepared to fend off disease, withstand weather related stress and other factors that can rob your crop of valuable yield.

#### Page 19

THE RESULTS SPEAK FOR THEMSELVES!

#### P.21 Text

### **SOYBEANS**

Two-year average from replicated USDA and University of Missouri research yielded an additional 9.8 bushel/acre in Roundup Ready and conventional soybeans.

**Levels of Fusarium colonization lowered by 66%.**

Fusarium colonization is an indicator of the potential fungal infection of roots leading to disease.

**Levels** Foliarblend treated plots showed increased levels of Mn reducing bacteria **increased** by an average of 76%.

Mn reducing bacteria transform manganese to plant available forms.

= Two-year average, USDA & University of Missouri replicated study

#### **GRAPH**

Roundup Ready™ Research

USDA & University of Missouri

Replicated Research, 16 oz./acre of FoliarBlend applied at V3 and R4 growth stage. ( $p < 0.05$ )

Control Plot: 46.3 bushels/acre

FoliarBlend: 60.4 bushels/acre

Results using FoliarBlend on Soybeans: 14.1 bushels per acre increase!

In a five-year independent study, the FoliarBlend plot with a 33% reduction in P & K rates, increased soybean yields by an average of 8 bushels/per acre compared to the check plot which received full rates of P & K. This represents an average of \$51.03/acre more net profit each year. [5 Year Missouri research](#)

~~5 Year Missouri research~~

GRAPH

Conventional Research

USDA & University of Missouri

Replicated Research, 16 oz./acre of FoliarBlend applied at V3 and R4 growth stage. ( $p < 0.05$ )

Control Plot: 33.2 bushels/acre

FoliarBlend: 47.6 bushels/acre

Results using FoliarBlend on Soybeans: 14.4 bushels per acre increase!

~~P.22 Text~~

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## THE RESULTS SPEAK FOR THEMSELVES!

### CORN

Two-year average from replicated USDA and University of Missouri research yielded an additional 17 bushel/acre in Roundup Ready corn.

~~Levels of Fusarium colonization lowered by 48%.~~

~~Fusarium colonization is an indicator of the potential fungal infection of roots leading to disease.~~

Levels FoliarBlend treated plots showed increased levels of Mn -reducing bacteria increased by an average 263% in corn.

Mn reducing bacteria transform manganese to plant available forms.

∴ Two-year average, USDA & University of Missouri replicated study

Increased corn yields by 14 bushels/acre at University of Missouri's Management System Evaluation Area (MSEA) University of Missouri.

#### GRAPH

Roundup Ready™ Research

USDA & University of Missouri

2008 Replicated Research, 16 oz./acre of Foliar Blend applied at V4 and V8 growth stage. (l.s.d. 0.05)

Control Plot: 199.4 bushels/acre

FoliarBlend: 224.1 bushels/acre

Results using FoliarBlend on Corn: 24.7 bushels per acre increase!

#### RICE

~~■ 52% increase in number of panicles~~

- 37% increase in dry biomass

~~■ 25% increase in dry root biomass~~

- 33% yield increase

~~■ Less symptoms of rice tungro virus & ragged stunt virus~~

Rice Research Conducted by The College of Technical Engineering and Agriculture Cuu long Delta Rice Research Institute — Vietnam

P.23 Text

#### Page 21

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#### COTTON

FoliarBlend produced 90 pounds additional lint/acre over check plots (six-plot average) and 213 lbs. of additional seed cotton/acre.

- *University of Tennessee Extension*

Based on four replications, FoliarBlend increased lint yield by 120 lbs./acre and seed cotton by 267 lbs./acre.

- Shoffner Research Farm, Newport, AR

FoliarBlend plot produced 119 pounds additional lint/acre over check plot.

- Test replicated 4 times, University of Missouri

A single in furrow application of FoliarBlend produced 77 pounds additional lint/acre over check plot.

- Test replicated 4 times, University of Arkansas

## WHEAT

18 bushels/acre increase over control and increase test weight from one spring foliar application.

- Irrigation Research Foundation; Yuma, Colorado

Graph

Research

Irrigation Research Foundation

2009 Research, 2 pints of FoliarBlend applied in 1 foliar application.

Control Plot: 57.5 bushels/acre

FoliarBlend: 75.71 bushels/acre

Results using FoliarBlend on Wheat: 18 bushels per acre increase!

Healthier Soils | Stronger Plants | Higher Yields | Better Profits

~~P.24 Text~~

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## MORE FOLIARBLEND CROP RESULTS...

### SNAP PEAS

In 'Roma II' and 'Hialeah' varieties, FoliarBlend increased yields by 17.4 bushels/acre over the check plot. This represents an increase of \$144.25/acre in net profit.

*Test replicated 6 times.*

*University of Tennessee*

### CARROTS

FoliarBlend increased yields by 113% in weight and 16% in numbers in 'Fullback' carrots over the check plot.

*Test replicated 4 times.*

*SEMO State University*

### ONIONS

In a study comparing 16 different growth additives, FoliarBlend came out on top in all areas, producing the highest yield, grade and a profit of \$633/acre more than check plot.

*Test replicated 6 times.*

*Oregon State University*

FoliarBlend increased yields by 93% over the check plot.

*Test replicated 4 times.  
SEMO State University*

## **TOMATOES**

FoliarBlend increased yields by 122% in weight and 104% in numbers in 'Husky' tomatoes.

*Test replicated 4 times.  
SEMO State University*

## **POTATOES**

FoliarBlend increased premium potato yields by 36.8% and grade A potato yields by 26% compared to the check plot. This represented an increase of \$815/acre more profit.

*University of Florida/Wetumpka Fruit Co.*

## **WATERMELON**

In 'Jubilee' and 'Crimson Sweet' varieties, FoliarBlend produced 243 more melons/acre weighing an additional 5,940 pounds over the check plot.

*Test replicated 6 times.  
University of Tennessee*

**P.25 Text**

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## **FOLIARBLEND VS. OTHER BIO-STIMULANTS**

Page 23

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### **FoliarBlend vs. other nutritional supplements**

There are several ~~so-called "bio-stimulant"~~ nutritional supplement products on the market today that range from simple formulations containing products like beer, soap, apple cider and humic acid, to more sophisticated solutions that contain enzymes, amino acids and live species of beneficial bacteria. Some are effective, some are not; however, none are able to match the benefits of FoliarBlend when you compare cost, performance and ease of application. Unlike ~~competing brands~~ these other products, FoliarBlend utilizes a proprietary stabilization process that allows it to be tank mixed with core inputs. Being able to tank mix and apply FoliarBlend in conjunction with conventional liquid fertilizers, herbicides, fungicides and pesticides represents a significant savings in application costs alone.

When stored properly, FoliarBlend also has a guaranteed shelf life of four years which further separates it from other products on the market today. Many ~~competing other~~ products break down and lose their effectiveness in a short period of time. For some, deterioration and loss of efficacy can begin in less than



30 days. Should unforeseen circumstances prevent you from applying FoliarBlend this year, you can be assured that when stored properly, you will get 100% effectiveness next year!

~~P.26 Text~~ [Page 24](#)

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## HOW TO USE FOLIARBLEND

Apply to the soil, seed, and plant foliage. Total applications of 32 – 48 oz./acre are typical for field crops with 16 oz./acre applied broadcast or in furrow at planting, followed by one to two foliar applications at 16 oz./acre each. If only one foliar application is made, rates up to 32 oz./acre may be used.

FoliarBlend can be applied through standard ground or aerial application equipment and properly equipped irrigation systems. It is available in 2.5 gallon containers, 55 gallon drums, 275 gallon mini-totes or bulk tanker load quantities.

~~P.27 Text~~

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### FIELD CROP USAGE

The applications listed may be applied in conjunction with corresponding [conventional](#) liquid fertilizer, herbicide, fungicide or insecticide applications.

Directions for Use: FoliarBlend may be applied by ground or air. If applied by air it is recommended to use a minimum of 5–10 gallons of water per acre. If applied by ground it is recommended to use 10–20 gallons of water per acre.

Compatibility: FoliarBlend is a stable product with excellent tank mixing characteristics. It can be applied in conjunction with most herbicides, insecticides, fungicides and foliar fertilizers. A jar test is recommended prior to tank mixing. Test results have shown that FoliarBlend can stimulate higher yields through increased nutrient uptake, ~~larger root mass, earlier fruiting and increased fruit retention~~. It is not a replacement for [conventional](#) fertilizer. Soil sample regularly and use FoliarBlend in conjunction with good fertility practices.

### Wheat & Other Small Grains

- Apply as a seed coating prior to planting with enough undiluted product to make seed damp to the touch, approximately 8 oz per bushel, then let dry or make an in furrow application at planting of 16 oz per acre. If an in furrow or seed treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16–24 ozs. per acre prior to jointing.
- Apply 16–24 ozs. per acre at the flag leaf stage. If Step 1 is missed, apply 32 ozs. per acre at the flag leaf stage.

### Cotton

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16 ozs. per acre at the 3–7 leaf stage.
- Apply 16 ozs. per acre at the pinhead square stage.
- Apply 16 ozs. per acre at early bloom.

### Soybeans

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16–32 ozs. per acre at the 3–5 trifoliate leaf stage.
- Apply a second application of 16–32 ozs. per acre at pre-bloom to pod set. If Step 1 is missed, apply 32 ozs. per acre prior to bloom.

### Corn & Grain Sorghum

- Apply as a seed coating prior to planting with enough undiluted product to make seed damp to the touch, approximately 6–8 oz per 50lb bag, then let dry or make an in furrow application at planting of 16 oz per acre. If an in furrow or seed treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16–24 ozs. per acre at the 3–5 leaf stage.
- Apply 16–24 ozs. per acre anytime from pre tassel to just after pollination has completed.

### Rice

- Apply as a seed coating prior to planting with enough undiluted product to make seed damp to the touch, approximately 8 oz per bushel, then let dry or make an in furrow application at planting of 16 oz per acre. If an in furrow or seed treatment is not possible, soil apply 16 – 32 ounces pr acre with preplant or preemerge chemicals.
- Apply 16–32 ozs. per acre when the rice seedling has 3 fully emerged leaves but before the seedling has completed development of 7 leaves or 3 tillers.
- To boost yields ~~and stimulate cell differentiation~~, apply at the rate of 16–32 ozs. per acre immediately after internode elongation or joint movement has begun.

P.28 Text

## Page 26

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### Tobacco

- Apply 16 ozs. of FoliarBlend per 100 gallons of setting water.
- Apply 16 – 32 ounces per acre with preplant herbicide.
- Apply 16 ounces per acre with each foliar spray made with conventional liquid fertilizer or insecticide.

### Sunflowers & Oilseeds

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16 ozs. per acre at 4–8 inches in growth.
- Apply 16 ozs. per acre at flowering stage.

### ■ Peanuts

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16 ozs. per acre at the 3–5 leaflet stage.
- Apply 16 ozs. per acre at initial pegging.
- Apply 16 ozs. per acre 10–14 days after the second foliar application.
- Apply 16 ozs. per acre during pod fill.

### Alfalfa, Hay & Forage Crops

- Apply as a seed coating prior to planting with enough undiluted product to make seed damp to the touch, approximately 8 oz per 50 lb bag, then let dry or make an in furrow application at planting of 16 oz per acre. If an in furrow or seed treatment is not possible, soil apply 16 – 32 ounces per acre broadcast with preplant or preemerge chemicals.
- Apply 16–32 ozs. per acre in the spring as soon as growth begins and continue applying 16 ozs. per acre 7-10 days after each cutting or heavy pasturing.

### VEGETABLE USAGE

The applications listed may be applied in conjunction with corresponding conventional liquid fertilizer, herbicide, fungicide or insecticide applications.

Directions for Use: FoliarBlend may be applied by ground or air. If applied by air it is recommended to use 5–10 gallons of water per acre. If applied by ground it is recommended to use 10–20 gals. of water per acre. FoliarBlend may also be applied through properly equipped irrigation and fertigation systems.

Compatibility: FoliarBlend is compatible with most herbicides, insecticides, fungicides and foliar fertilizers. A jar test is recommended prior to tank mixing. Test results have shown that FoliarBlend can stimulate higher yields through increased nutrient uptake, **larger root mass, earlier fruiting and increased fruit retention**. It is not a replacement for conventional fertilizer. Soil sample regularly and use FoliarBlend in conjunction with good fertility practices.

P.29 Text

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### Edible Beans — Green, Lima, Dry, Snap, Pintos, Black Turtles, Marrowfats, Great Northern, Navy, Yellow Eyes, Kidney, Garbanzo & Seed

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16–32 ozs. per acre when the first trifoliate is unfolded.
- Apply 16–32 ozs. per acre 2 weeks after Step 1.
- Apply 16–32 ozs. per acre at first bloom.

### Carrots, Onions, Leeks, Radish Sugarbeets, Parsnip, Rutabaga & Turnips



- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16-32 ozs. per acre at 3-4 inches in growth.
- Apply 16-32 ozs. per acre 2–3 weeks after Step 1.
- Apply 16-32 ozs. per acre 2-3 weeks after Step 2.

#### Broccoli, Cauliflower, Cabbage, Lettuce & Spinach

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16-32 ozs. Per acre when 4–6 true leaves are formed.
- Apply 16-32 ozs. per acre 2 weeks after Step 1.
- Apply 16-32 ozs. per acre 2 weeks after Step 2.

NOTE: To maximize yields, make continuous applications of 16 ozs. per acre at 7–10 day intervals after the first application throughout the growing season.

#### Cantaloupe, Pumpkins, Watermelon, Honeydew, Cucumber & Squash

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16-32 ozs. per acre when the 3rd leaf begins to unfold.
- Apply 16-32 ozs. per acre 2–3 weeks after Step 1.
- Apply 16-32 ozs. per acre 2–3 weeks after Step 2.

NOTE: To maximize yields, make continuous applications of 12–16 ozs. per acre at 7–10 day intervals after the first application throughout the growing season.

#### Pepper, Tomato, Eggplant & Okra

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16-32 ozs. per acre when the plant has 3–4 true leaves.
- Apply 16-32 ozs. per acre at first bloom.
- Apply 16-32 ozs. per acre at first fruit set.

NOTE: To maximize yields, make continuous applications of 12–16 ozs. per acre at 7–10 day intervals after the first application throughout the growing season.

#### Sweet Corn & Popcorn

- Apply as a seed coating prior to planting with enough undiluted product to make seed damp to the touch, approximately 6- 8 oz per 50lb bag, then let dry or make an in furrow application at planting of 16 oz per acre. If an in furrow or seed treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16-32 ozs. per acre when plants are in the 4–6 leaf stage.
- Apply 16-32 ozs. per acre at the 8–10 leaf sate.

#### Potatoes

- Make an in furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with preplant or preemerge chemicals.
- Apply 16-32 ozs. per acre at tuber initiation (approximately 4–6 weeks after emergence.)
- Apply 16-32 ozs. per acre at pre-bloom stage.

- Apply 16-32 ozs. per acre during bloom.

#### Sweet potato

- Treat slips prior to transplanting with a 2% solution of FoliarBlend
- Apply 16 – 32 oz per acre to beds prior to or during transplanting.
- Apply 16-32 ozs. per acre after 3rd new leaf
- Apply 16-32 ozs. per acre at pre-bloom stage
- Apply 16-32 ozs. per acre during bloom

P.30 Text

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### FRUIT AND NUTS USAGE

The applications listed may be applied in conjunction with corresponding conventional liquid fertilizer, herbicide, fungicide or insecticide applications.

**Directions for Use:** FoliarBlend may be applied by ground or air. If applied by air it is recommended to use 5–10 gallons of water per acre. If applied by ground it is recommended to use 10–20 gals. of water per acre.

**Compatibility:** FoliarBlend is compatible with most herbicides, insecticides, fungicides and foliar fertilizers. A jar test is recommended prior to tank mixing. Test results have shown that FoliarBlend can stimulate higher yields through increased nutrient uptake, ~~larger root mass, earlier fruiting and increased fruit retention~~. It is not a replacement for conventional fertilizer. Soil sample regularly and use FoliarBlend in conjunction with good fertility practices.

#### Dates, Figs, Olives, Persimmons & Pomegranates

- Apply 16–32 ozs. per acre during pink bud stage.
- Apply 16–32 ozs. per acre every 2–3 weeks up to harvest.

#### Apples & Pears

- Apply 16–32 ozs. per acre at green growth (tight cluster) stage.
- Apply 16–32 ozs. per acre at pre-bloom stage.
- Apply 16–32 ozs. per acre at half bloom stage.
- Apply 16–32 ozs. per acre at 3/4 petal fall.
- Apply 16–32ozs. per acre at young fruit stage.

#### Wine, Table Grapes & Kiwifruit

- Apply 16–32 ozs. per acre at the start of spring growth.
- Apply 16–32 ozs. per acre at pre-bloom stage.
- Apply 16–32 ozs. per acre at fruit set.

### **Almonds, Pecans & Walnuts**

- Apply 16–32 ozs. per acre at early bloom.
- Apply 16–32 ozs. per acre every 4–6 weeks until after nut fill.

### **Citrus & Avocados**

- Apply 16–32 ozs. per acre pre-bloom
- Apply 16–32 ozs. per acre at full bloom – 2/3 petal fall.
- Apply 16–32 ozs. per acre when fruit is approximately 1/2 inch in diameter.

### **Peaches, Nectarines, Apricots & Cherries**

- Apply 16–32 ozs. per acre at pre- to early bloom stage.
- Apply 16–32 ozs. per acre at petal fall.
- Apply 16–32 ozs. per acre at young fruit stage.

### **Plums & Prunes**

- Apply 16–32 ozs. per acre at white bud stage.
- Apply 16–32 ozs. per acre at early bloom.
- Apply 16–32 ozs. per acre at petal fall.
- Apply 16–32 ozs. per acre at fruit set.

### **Berry Bushes**

- Apply 16–32 ozs. per acre at leaf initiation.
- Apply 16–32 ozs. per acre at early bloom stage.
- Apply 16–32 ozs. per acre at late petal fall.
- Apply 16–32 ozs. per acre at fruit set.

### **Strawberries**

- Apply 24–32 ozs. per acre as soon as there is sufficient foliage to absorb spray.
- Apply 24–32 ozs. per acre at first bloom stage.
- Apply 24–32 ozs. per acre at fruit set.

NOTE: Sprays can continue every 14 days through harvest.

### **P.31 Text**

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Headquartered in Doniphan, Missouri, Agri-Gro Marketing, Inc. has grown to become a global company with sales in six continents.

## **WHO WE ARE**

Agri-Gro Marketing, Inc.®

For more than 30 years, Agri-Gro Marketing, Inc., has established a tradition of excellence, manufacturing an ever-increasing line of innovative products that offer unmatched value for the global

marketplace. Over that time, we have become leaders in the field of ~~bio-stimulant technology for~~ agricultural and horticultural ~~use~~ plant/soil nutrition. Thanks to the development of innovative products like FoliarBlend, producers around the globe can grow higher quality, better yielding crops while reducing production costs and the need for chemical inputs.

Quite simply, our technology helps growers create healthier, more balanced soils and plants that produce higher yields with superior quality. Most of the focus in agriculture is on the chemical and physical aspects of the production process and rightfully so, they are truly important. However, in order to maximize any plant's yield potential one must look beyond just the physical and chemical and consider the biological element of crop production as well. This is an essential area of crop production that many growers overlook and why FoliarBlend was developed. It is a truth, FoliarBlend does what ~~fertilizer~~ conventional N-P-K fertilizers and physical tillage alone cannot.

Our products have been tested by the USDA and numerous state universities and proven under field conditions to perform as claimed. FoliarBlend improves the yield and quality of grain, fruit, vegetable and horticultural crops while decreasing conventional fertilizer requirements and the need for chemical inputs ~~such as pesticides, herbicides and fungicides. Agri-Gro's proprietary formulations are derived from a unique process that extracts beneficial plant compounds along with naturally occurring bacteria and fungi.~~ Our products are environmentally safe, non-toxic, noncarcinogenic and contain no ~~pathogenic~~ patho-genic micro-organisms.

## Back Cover Text

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For more information on additional products by Agri-Gro Marketing, Inc. visit [www.agrigro.com](http://www.agrigro.com)

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<u>Moved to</u>	
Style change	
Format change	
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Inserted cell	
Deleted cell	
Moved cell	
Split/Merged cell	
Padding cell	

Statistics:	
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Insertions	155
Deletions	234
Moved from	3
Moved to	3
Style change	0
Format changed	0
Total changes	395



## FoliarBlend Soybean Brochure

### Front Cover

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Healthier Soils - Stronger Plants - Higher Yields

MAXIMIZE YOUR SOYBEAN YIELDS

### Interior (left)

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#### The FoliarBlend Advantage

In order for growers to maximize yield and profit potential, they must look beyond the standard options like the newest trend in equipment, the latest seed genetics or the hottest chemical that promises to solve their problems. Even bumping conventional (N-P-K) fertilizer rates, expecting yields to jump accordingly, is simply not the answer to better profits and higher yields. To truly maximize yield and profit margin, look beyond the obvious physical and chemical fixes, and consider the critical role biological life plays in crop production. In fact, many yield problems are caused by the neglect of this essential component in crop production which, unfortunately, is all too often overlooked by most growers.

What if you could simply tank mix a product to your normal spray program that has a targeted effect on the soil and plants' biological system, one that improves soil structure, increases fertilizer efficiency, supports vibrant and robust plant growth, and boosts yields? FoliarBlend® is designed to do just that and more. FoliarBlend does what chemicals, conventional fertilizers and physical tillage alone can't, and it fills a growing void that is missing in today's agriculture. Don't let the name mislead you. FoliarBlend is just as effective in the soil as it is on the plant. Smart growers looking for an edge are quickly discovering just how rewarding FoliarBlend can be, both in the field and in the bank.

#### The Biological Edge

All too often, the biological component of plant growth is an overlooked key to increasing yields and profits. When equally addressed along with the physical and chemical aspects of crop production, the results can be significant in terms of yield and profit growth.

The 3 soil properties: chemical, physical, biological

### Interior (right)

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#### FoliarBlend Soybean Results

[chart 1 info]



**USDA & University of Missouri  
Roundup Ready™ Research**

Replicated over 12 plots in 3 locations, 2 - 16 oz./acre of FoliarBlend applied at V3 and R5 - R7 growth stages. (p < 0.05) 2010

- **Control Plot:** 43.6 bushels/acre
- **FoliarBlend:** 50.2 bushels/acre
- **Results using FoliarBlend on Soybeans:** 6.5 bushels/acre increase!

[\[chart 2 info\]](#)

**North Carolina State Co-Op Extension  
Roundup Powermax® Research**

Replicated Research. Test one: 32 oz./acre of FoliarBlend applied at V3. Test two: 2 - 16 oz./acre of FoliarBlend applied at VE-VC & V3. Two study average. 2009

- **Control Plot:** 37.5 bushels/acre
- **FoliarBlend:** 47.6 bushels/acre
- **Results using FoliarBlend on Soybeans:** 10.1 bushels/acre increase!

[\[chart 3 info\]](#)

**USDA & University of Missouri  
Roundup Ready™ Research**

Replicated Research, 16 oz./acre of FoliarBlend applied at V3 and R4 growth stage. (p < 0.05) Two year, 3 study average. 2006-2007

- **Control Plot:** 42.9 bushels/acre
- **FoliarBlend:** 52.7 bushels/acre
- **Results using FoliarBlend on Soybeans:** 9.8 bushels/acre increase!

[\[chart 4 info\]](#)

**USDA & University of Missouri  
Conventional Soybean Research**

Replicated Research, 16 oz./acre of FoliarBlend applied at V3 and R4 growth stage. (p < 0.05)

- **Control Plot:** 33.2 bushels/acre
- **FoliarBlend:** 47.6 bushels/acre
- **Results using FoliarBlend on Soybeans:** 14.4 bushels/acre increase!

## **Improved Soil Conditions**

[\[chart5 info\]](#)

FoliarBlend treated plots had increased Fluorescent Pseudomonad Bacteria levels by an average 256% in soybeans.

Fluorescent Pseudomonad Bacteria are generally associated with beneficial effects of the rhizosphere bacterial community.

**USDA & University of Missouri  
Roundup Ready™ Soybean Research**

Replicated Research, Two Year Average (2007-2008)

- **Control Plot:** 30 cfu / gram x 10,000
- **FoliarBlend:** 107 cfu / gram x 10,000
- **Results using FoliarBlend on Soybeans:** 256% Increase in F.P. Bacteria

**[chart 6 info]**

FoliarBlend treated plots had increased Mn reducing bacteria levels by an average 89% in soybeans.

Mn reducing bacteria transform manganese to a plant available form.

**USDA & University of Missouri  
Roundup Ready™ Soybean Research**

Replicated Research, Two Year 3 Study Average (2007-2008)

- **Control Plot:** 55 cfu / gram x 10,000
- **FoliarBlend:** 87 cfu / gram x 10,000
- **Results using FoliarBlend on Soybeans:** 89% Increase in Mn-Reducing Bacteria

## Back Cover

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### Soybean Usage

Environmentally-safe FoliarBlend can be applied through standard ground or aerial application equipment and properly equipped irrigation systems. It is available in 2.5 gallon containers, 55 gallon drums, 275 gallon mini-totes or bulk tanker load quantities.

The applications listed may be applied in conjunction with corresponding conventional liquid fertilizer, herbicide, fungicide or insecticide applications.

**Directions for Use:** FoliarBlend may be applied by ground or air. If applied by air it is recommended to use 5–10 gallons of water per acre. If applied by ground it is recommended to use 10–20 gallons of water per acre.

**Compatibility:** FoliarBlend is a stable product with excellent tank mixing characteristics. It can be applied in conjunction with most herbicides, insecticides, fungicides and foliar fertilizers. A jar test is recommended prior to tank mixing. FoliarBlend is not a replacement for conventional fertilizer. Soil sample regularly and use FoliarBlend in conjunction with good fertility practices.

#### **Rates and Usage**

- Make an in-furrow application at planting of 16 oz per acre. If an in furrow treatment is not possible, soil apply 16 – 32 ounces per acre with pre-plant or pre-emerge chemicals.
- Apply 16–32 ozs. per acre at the 3–5 trifoliate leaf stage.
- Apply a second application of 16–32 ozs. per acre between pre-bloom and pod set. If step one is missed, apply 32 ozs. per acre prior to bloom.

For additional information on products by Agri-Gro Marketing, Inc. visit [www.agrigro.com](http://www.agrigro.com)

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## Front Cover

Healthier Soils + Stronger Plants + Higher Yields

## Maximize Your Soybean Yields

Page 2 Text

### MAXIMIZE YOUR SOYBEAN YIELDS

## Interior (left)

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~~{image-caption}~~

The ~~Three Soil Properties~~ 3 soil properties: chemical, physical, biological

◆ ~~Chemical~~

- Physical
- Biological

#### Page 3 Text

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#### Interior (right)

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### FoliarBlend Soybean Results

[chart 1 info]

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[chart 3 info]

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[chart 4 info]

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## Improved ~~Plant Health – Less Disease~~ Soil Conditions

[chart 5 info]

FoliarBlend ~~lowered~~ treated plots had increased Fluorescent Pseudomonad Bacteria levels ~~of Fusarium colonization~~ by an average ~~59~~ 256% in soybeans.

~~Fusarium colonization is an indicator of the potential fungal infection of roots, which can lead to disease.~~ Fluorescent Pseudomonad Bacteria are generally associated with beneficial effects of the rhizosphere bacterial community.

USDA & University of Missouri  
Roundup Ready™ Soybean Research

Replicated Research, ~~Three~~ Two Year ~~5 Study~~ Average (2007-2008)

- **Control Plot:** ~~99 fungal colonies / 100cm of root~~ 30 cfu / gram x 10,000
- **FoliarBlend:** ~~39 fungal colonies / 100cm of root~~ 107 cfu / gram x 10,000
- **Results using FoliarBlend on Soybeans:** ~~59% Reduction in Fungal Colonies~~ 256% Increase in F.P. Bacteria

[chart 6 info]

FoliarBlend treated plots had increased Mn reducing bacteria levels by an average 89% in soybeans.

Mn reducing bacteria transform manganese to a plant available form.

USDA & University of Missouri  
Roundup Ready™ Soybean Research

Replicated Research, Two Year 3 Study Average (2007-2008)

- **Control Plot:** 55 cfu / gram x 10,000
- **FoliarBlend:** 87 cfu / gram x 10,000
- **Results using FoliarBlend on Soybeans:** 89% Increase in Mn-Reducing Bacteria

[chart 7 info]

~~FoliarBlend increased Fluorescent Pseudomonad Bacteria levels by an average 256% in soybeans.~~

Fluorescent Pseudomonad Bacteria are generally associated with beneficial effects of the rhizosphere bacterial community, including aiding in the suppression of fungal pathogens in the rhizosphere.

**USDA & University of Missouri  
Roundup Ready™ Soybean Research**

Replicated Research, Two Year Average (2007-2008)

- **Control Plot:** 30 cfu / gram x 10,000
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## Back Cover ~~Text~~

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**FoliarBlend by Agri-Gro**

**[www.foliarblend.com](http://www.foliarblend.com)**

For additional information on products by **Agri-Gro Marketing, Inc.** visit **[www.agrigro.com](http://www.agrigro.com)** Agri-Gro Marketing, Inc.  
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